<u>What is Claimed is:</u>

1   1/   In a system including a plurality of PCI segments, with each said PCI segment

2   comprising one or more PCI cards mounted in slots on a PCI chassis, a bridge for

3   coupling PCI segments, said bridge comprising:

4   a board; and

5   a plurality of connectors mounted on said board for electrically connecting said

6   board to a first and a second PCI segment on a backplane of the PCI chassis.

2.   A bridge in accordance with claim 1, wherein:

said plurality of connectors are J1 and J2 connectors.

3.   A bridge in accordance with claim 1, wherein:

said board has four connectors for connection to the P1 and P2 groups of pins of

3   said first and second PCI segments.

1   4.   A bridge in accordance with claim 1, further comprising:

2   a processor mounted on said board and electrically connected to said plurality of

3   connectors, wherein said processor logically connects said first and second PCI segments

4   with a transparent bridge.

1   5.   A bridge in accordance with claim 1, further comprising:

2   a processor mounted on said board and electrically connected to said plurality of

3   connectors, wherein said processor logically connects said first and second PCI segments

4   with a non-transparent bridge.

6.   A bridge in accordance with claim 1, wherein:

    said board electrically connects to said first and said second PCI segments in

adjacent slots on the PCI chassis.

7.   A bridge in accordance with claim 1, wherein:

    said board electrically connects to said first and said second PCI segments in non-

3   adjacent slots on the PCI chassis.

1   8.   A bridge in accordance with claim 1, wherein:

2   said board is configured to mount on said backplane of the PCI chassis in the slot

3   occupied by a transition card.

                            - 14 -

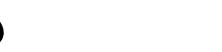1   9.   A bridge in accordance with claim 1, wherein:

2   said plurality of connectors connect only to groups of P1 and P2 pins.

1   10.   In a system including at least three PCI segments, with each PCI segment

2   comprising one or more PCI cards mounted in slots on a PCI chassis, a bridge for

3   connecting to PCI segments, said bridge comprising:

4   a first board;

5   a plurality of first board connectors mounted on said first board for electrically

6   connecting said first board to a first and a second PCI segment on the backplane of the

7   PCI chassis;

8   a second board;

9   a plurality of second board connectors mounted on said second board for

10   electrically connecting said second board to said second and a third PCI segment on the

11   backplane of the PCI chassis.

1   11.   A bridge in accordance with claim 10, further comprising:

2   a first processor mounted on said first board and electrically connected to said

3   plurality of first board connectors;

4   a second processor mounted on said second board and electrically connected to

5   said plurality of second board connectors; and

6   wherein said first processor and said second processor logically connect said first,

7   said second, and said third PCI segments with a transparent bridge.

1   12.   A bridge in accordance with claim 10, further comprising:

2   a first processor mounted on said first board and electrically connected to said

3   plurality of first board connectors;

4   a second processor mounted on said second board and electrically connected to

5   said plurality of second board connectors; and

6   wherein said first processor and said second processor logically connect said first,

7   said second, and said third PCI segments with a non-transparent bridge.

1   13.   A bridge in accordance with claim 10, wherein:

2   said first board and said second board are identical; and

3   said first processor and said second processor are identical.

1   14.   A method of bridging a plurality of PCI segments mounted on a PCI chassis

2   without occupying a front side slot of said PCI chassis, comprising:

3   connecting a first PCI segment slot and a second PCI segment slot with a first PCI

4   bridge card; and

5   locating said PCI bridge card along a backplane.

1   15.   A method in accordance with claim 14, further comprising:

2   mounting said PCI bridge card in a notch between the PCI chassis and a transition

3   card.

1   16.   A method in accordance with claim 14, further comprising:

2   connecting a second PCI segment slot and a third PCI segment slot with a second

3   PCI bridge card; and

4   locating said PCI bridge card along said backplane.

1   17.   A method in accordance with claim 16, wherein:

2   bridging said first, said second, and said third PCI segments with said first and said

3   second PCI bridge cards is performed with a transparent bridge.

1   18.   A method in accordance with claim 16, wherein:

2   bridging said first, said second, and said third PCI segments with said first and said

3   second PCI bridge cards is performed with a non-transparent bridge.

1   19.   A method of bridging PCI segments on a PCI chassis, comprising:

2   connecting a pair of adjacent PCI segments with a PCI bridge card across the

3   Groups of P1 and P2 pins on the backplane of a pair of adjacent PCI slots; and

4   orienting said PCI bridge card substantially parallel to the PCI chassis .

1   20.   A method in accordance with claim 19, further comprising:

2   installing transition cards on the backplane of said pair of adjacent PCI slots

3   substantially perpendicular to the PCI chassis.